In the Claims

Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please cancel claims 5 and 13 without prejudice or disclaimer.

Please amend pending claims 1, 6, 8, 14 and 18 as noted below.

1. (Currently amended) A method of producing a temperature-compensated reference voltage comprising steps of:

providing a stacked bandgap cell including at least four bipolar elements; and

biasing at least a first of the four elements with a first quiescent current and biasing at least a second of the four elements with a second quiescent current;

wherein a temperature coefficient of the first quiescent current is different from a temperature coefficient of the second quiescent current;

wherein the first quiescent current is equal to a temperature-independent current plus a temperature-dependent current, and the second quiescent current is equal to the temperature-independent current minus the temperature-dependent current.

2. (Original) The method as claimed in claim 1 wherein each of the at least four elements is a diode.

3. (Original) The method as claimed in claim 1 wherein each of the at least four elements is a transistor.

4. (Original) The method as claimed in claim 1 wherein the temperature coefficient of the first quiescent current is positive and the temperature coefficient of the second quiescent current is negative.

5. Canceled

6. (Currently amended) The method as claimed in claim 1 ~~5~~ further including a step of using an output voltage of the bandgap cell to produce the temperature-independent current.

7. (Original) The method as claimed in claim 6 wherein the a step of using includes providing the output voltage of the bandgap cell across a resistor to produce the temperature-independent current.

8. (Currently amended) A bandgap cell that produces a first-order and a second-order temperature-compensated reference output voltage comprising:

at least first and second bipolar elements;

wherein the first bipolar element is biased with a first quiescent current and the second bipolar element is biased with a second quiescent current, a temperature coefficient of the first quiescent current being different from a temperature coefficient of the second quiescent current; ~~,~~

wherein the first quiescent current is equal to a temperature-independent current plus a temperature-dependent current and the second quiescent current is equal to the temperature-independent current minus the temperature-dependent current.

9. (Original) The bandgap cell of claim 8 wherein the at least first and second bipolar elements includes at least four bipolar elements.

10. (Original) The bandgap cell of claim 8 wherein each of the at least first and second bipolar elements is a transistor.

11. (Original) The bandgap cell of claim 8 wherein each of the at least first and second bipolar elements is a diode.

12. (Original) The bandgap cell of claim 8 wherein the temperature coefficient of the first quiescent current is positive and the temperature coefficient of the second is negative.

13. Canceled

14. (Currently amended) The bandgap cell of claim 8 ~~13~~ wherein the output voltage of the bandgap cell is used to produce the temperature-independent current.

15. (Original) The bandgap cell of claim 14 wherein the output voltage is placed across a resistor to produce the temperature-independent current.

16. (Original) The bandgap cell of claim 13 further including a current mirror to produce at least one additional copy of the temperature-dependent current.

17. (Original) The bandgap cell of claim 8 further including a gain amplifier coupled to at least the first and second bipolar elements.

18. (Currently amended) A method for providing a temperature-compensated bandgap reference voltage comprising:

providing a bandgap reference voltage cell including at least first and second ~~two~~ bipolar elements;

biasing the first bipolar element with a first quiescent current and the second bipolar element with a second quiescent current, the first quiescent current equal to a temperature-independent current plus a temperature- dependent current and the second quiescent current equal to the temperature-independent current minus the temperature-dependent current; and

realizing first and second order temperature compensation to the reference voltage within the bandgap cell.

19. (Original) The method as claimed in claim 18 further including the step of maintaining the bandgap reference voltage at approximately half of a full-scale reference voltage.

20. (Original) The method as claimed in claim 19 wherein the approximately half of the full-scale reference voltage is within the range of 2.3 volts to 2.7 volts.